

PCT

WORLD INTELLECTUAL PROPERTY ORGANIZATION  
International Bureau



INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification <sup>6</sup> :	A1	(11) International Publication Number: WO 99/55902 (43) International Publication Date: 4 November 1999 (04.11.99)
C12Q 1/00		
(21) International Application Number: PCT/US99/09366		(81) Designated States: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).
(22) International Filing Date: 29 April 1999 (29.04.99)		
(30) Priority Data: 60/083,418 29 April 1998 (29.04.98) US		
(71) Applicant (for all designated States except US): UNIVERSITY OF SOUTH FLORIDA [US/US]; 4202 Fowler Avenue, FAO 126, Tampa, FL 33620 (US).		
(72) Inventor; and (75) Inventor/Applicant (for US only): TABIBZADEH, Siamak [US/US]; 71 Parkview Drive, Searingtown, NY 11507 (US).		
(74) Agent: KOHN, Kenneth; Kohn & Associates, Suite 410, 30500 Northwestern Highway, Farmington Hills, MI 48334 (US).		
<p>(54) Title: DIAGNOSTIC MARKERS OF HUMAN FEMALE INFERTILITY</p> <p>(57) Abstract</p> <p>There is provided a method for diagnosing endometrial irregularities particularly infertility by screening an endometrial sample or bodily fluid for the presence of ebaF. Also provided is a diagnostic tool for determining the presence of endometrial irregularities screens a sample for the presence of ebaF. A contraceptive containing an effective amount of ebaF and a pharmaceutically acceptable carrier is also provided. Additionally, a diagnostic kit for timing conception is provided having a screening tool for screening a sample for the present of ebaF. Also provided is a method of treating endometrial irregularities by down-regulating the expression of ebaF.</p>		
<p>The gel electrophoresis image shows bands for TGF-β4 and GAPDH. The lanes are labeled with marker sizes: 2.5 kb, 2.1 kb, and 1.5 kb. The TGF-β4 band is located between the 2.1 kb and 1.5 kb markers. The GAPDH band is at the bottom of the gel, corresponding to the 1.5 kb marker.</p>		

102Rcc'd PCT/US 30 OCT 2000

09/674254

PCT/US99/09366

DIAGNOSTIC MARKERS OF HUMAN FEMALE INFERTILITY

INSAI

CROSS-REFERENCE TO RELATED APPLICATIONS

This application is a conversion of a United States Provisional Application filed April 29, 1998, Serial No. 60/083,418. Continuation in Part of application Serial No. 08/919,421 filed 8/27/97 which claims benefit of US Provisional Application No. 60/025,800 filed August 27, 1996.

10

GOVERNMENT SUPPORT

This invention was made with Government support under Grant Number (s) CA46866 awarded by the National Institutes of Health (NIH) and HD 35041 and HD 34824 from the National Cooperative Program on Markers of Uterine receptivity for Blastocyst Implantation. The Government has certain rights in the invention.

20

BACKGROUND OF THE INVENTIONFIELD OF THE INVENTION

The present invention relates to diagnostic and prognostic markers of endometrial irregularities, particularly infertility. More specifically, the present invention relates to diagnostic markers which can be used in treatment of infertility, kits for timing conception, contraception, and for treatment of excessive bleeding conditions.

30

BACKGROUND ART

Human endometrium is a unique tissue that undergoes sequential phases of proliferation, secretory changes, tissue shedding and bleeding during menstruation. After ovulation, during a defined period designated as